



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : <b>G06F 17/60, G07F 7/08, G07G 1/14 // G06F 157:00</b>		A1	(11) International Publication Number: <b>WO 98/08175</b> (43) International Publication Date: 26 February 1998 (26.02.98)
<p>(21) International Application Number: <b>PCT/NO97/00208</b></p> <p>(22) International Filing Date: 19 August 1997 (19.08.97)</p> <p>(30) Priority Data: 963456 20 August 1996 (20.08.96) NO</p> <p>(71)(72) Applicants and Inventors: LEIRFALL, Lasse [NO/NO]; S.N. Hansensgt. 10, N-4790 Lillesand (NO). ØSTERHOLT, Knut, Larsen [NO/NO]; Rugdeveien 1, N-4950 Risør (NO).</p> <p>(72) Inventor; and</p> <p>(75) Inventor/Applicant (for US only): SIGBJØRNSEN, Sigurd [NO/NO]; Tykkåsen 52, N-4870 Fevik (NO).</p> <p>(74) Agent: FRIBERG, Arild; Bryn &amp; Aarflot A/S, P.O. Box 449 Sentrum, N-0104 Oslo (NO).</p>		<p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b> With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments. In English translation (filed in Norwegian).</p>	
<p>(54) Title: A METHOD AND A SYSTEM FOR ACHIEVING PAYMENT MEDIATION BETWEEN A PAYMENT RECIPIENT SELLING STORED VALUE CARDS, AND VENDORS PROVIDING THE SERVICES FOR WHICH THE CARDS ARE USED</p> <p>(57) Abstract</p> <p>A method and a system for achieving mediation of settlement between a payment recipient (A, B) selling, or increasing the credit value of stored value cards or electronic payment chips, and other vendors of the services that the card is used to pay for. The method entails that the seller (A, B) of a card or a card credit increase transfers the sales income to the income accounts (AIK, BIK) of an accounting system (KS), where the credit reduction records (R1, R2, R3 ..., Rn) in the use vending machines (P, BS, TA) when the card is used, are also transferred via connection lines (FL) to the accounting system (KS), where these records constitute a settlement basis from the income accounts (AIK, BIK) of the seller of cards or increase of card credit, and to the accounts (R1K, R2K, R3K ..., RnK) of different vendors of use vending-machine services. The card or chip may contain an identification of the person or authority having received payment, and an identification of country or currency affiliation.</p> <pre> graph TD     A[A] -- BL --&gt; AIK[AIK]     B[B] -- BL --&gt; BIK[BIK]     EDB[EDB] --- R1K[R1K]     EDB --- R2K[R2K]     EDB --- R3K[R3K]     EDB --- RnK[RnK]     KS[KS] --- AIK     KS --- BIK     KS --- R1[R1]     KS --- R2[R2]     KS --- R3[R3]     KS --- Rn[Rn]     KS --- TA1[TA]     KS --- TA2[TA]     KS --- TA3[TA]     EDB --- FL1[FL]     KS --- FL2[FL]     TA1 --- FL3[FL]     TA2 --- FL4[FL]     TA3 --- FL5[FL]   </pre>			

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		

**A METHOD AND A SYSTEM FOR ACHIEVING PAYMENT MEDIATION  
BETWEEN A PAYMENT RECIPIENT SELLING STORED VALUE CARDS, AND  
VENDORS PROVIDING THE SERVICES FOR WHICH THE CARDS ARE USED**

5

The invention relates to a method and a system for achieving settlement mediation between a payment recipient selling stored value cards, and other vendors providing the services for which the card is used as payment.

10 Ordinary payment cards have gained widespread use today in commerce and sales of services. As is well known, these cards operate in attachment to an account, and payment is made by means of a so-called online data system which transfers the amount from the cardholder's account to the vendor's account. In order to identify that the user is the rightful owner of the card, the user has to enter  
15 a secret, personal numerical code before the transaction may take place. The numerical code is not stored in the card, but in the data system itself. Thereby the card is safeguarded against misuse if it is lost, however at the same time the use of the card requires communication between the data system and the user via an extensive line system, having as a consequence complexity and waiting periods.  
20 Therefore, such cards are not well suited for small amounts and in situations like e.g. payment of a toll fee, which is supposed to be made rapidly. Since every use of the card also leads to one transaction in the system, there is also a question regarding capacity in relation to costs.

25 The use of simplified cards that contain limited amounts and that do not require a personal code or line connections in use, is not novel either. For instance the telephone companies utilize such cards today. The cards that are sold, have different numbers of counter units, which in use are counted down to zero. The advantages are that the user does not have to use coins in slot telephones, and that the telephone company saves collection costs.

30 In addition, in Norway there is a pilot project in which Hamar County Council issues such a card for use in parking meters, and which has also been suggested extended to ticket payment in the local cinema. In the Norwegian

newspaper Aftenposten, July 9, 1996, page 19, an article written by Lars Sætre mentions a similar project on a significantly larger scale, in the arrangement of the Olympic games in Atlanta. The card companies VISA and MasterCard implement in this case a cooperation project, however in the article it is also mentioned that there has been "conducted numerous tests of stored value cards around the world". Patent publications US 5,264,689, 5,409,092, 5,440,108, 5,495,098 and 5,500,515 relate to various types of such cards, principles for updating the balance, and safeguarding against forgery and misuse.

From the above it seems reasonable to state that both the principles for such stored value cards and the use thereof are well known. However, the card systems mentioned above have a very problematic barrier which limits their spread:

Since the card, when it is used, does not enter an amount into the account of the automatic vending machine used, but subtracts from a pre-paid amount to the card vendor by reducing the card credit, the card can only be used to buy services from the person or authority which is also receiving payment for the card itself. For instance a parking card that has been paid to one municipality, cannot be used for parking in another municipality, because if so, the first municipality would receive payment for a service rendered physically and economically by the last mentioned municipality.

Within a single area like e.g. the above mentioned arrangement in Atlanta it is clear that the organizer to a large extent may sell several of his services based upon such a card, however if one considers a spread over a large number of such selective use fields, one will soon reach an unmanageable number of cards per person to meet a daily demand.

The object of the present invention is to achieve mediation of settlement between the payment recipient and the renderer of the service that the card is used to pay for, so that a system for an account-free "change" card (stored value card) can be used for payment of services and benefits in general without the renderer having such a regional or selective economic attachment to the card seller or issuer. At the same time the system will take care of the advantages of the stored value card in rapid use without entering a code of digits, and obtain the

low number of transactions between accounts provided today by the above mentioned cards. For the card user, this means that it is possible to use one single card for payment of all types of services attached to the system, e.g. parking, toll stations, cinemas, or for that matter; - also for ordinary small shopping in kiosks and shops.

The method and a system for a stored value card in accordance with the invention is shown in fig. 1. An example of such a card is shown in fig. 2. The card may be of the ordinary type which is either based on a magnetic stripe or an electronic chip. Of the last mentioned type there are today also electronic chips that are able to communicate with automatic machines over a certain distance and without physical contact, and these may consequently be attached to e.g. a car or the person himself, and have even been surgically operated in under the skin. The designation "stored value card" shall be understood to comprise also such cards/chips.

A stored value card able to utilize the method of the invention, contains at least two data: Credit/balance and identification of card company/payment recipient. Sale of a card or increase of card credit, takes place on a vending machine (A) or (B) that either through periodic transactions or through direct line transfer (BL) transfers the incomes to the system income account (AIK) or (BIK) attached to the accounting system (KS). The vending machines (A) and (B) represent e.g. two different card companies which thus may have different income accounts. If all card vending places are attached to the same company, it is only necessary with one single income account. Alternatively, the method entails that the entries for several companies can be provided with an identification of the particular company, so that one single account can be used anyway, but in practice this is the same as operating with several accounts.

When using the card in e.g. the parking meters (P), the credit/balance (S) is reduced by the amount for which one selects to buy parking time. At the same time the parking meter (P) records in a register (R1) the amount as an outstanding debt from the identified card company. Either by means of a periodic collection of recorded outstanding debts by dispatch, or by line transfer (FL), the records are transmitted to the accounting system (KS) for settlement. Corresponding opera-

tions are made when the card is used for payment in other vending machines like e.g. in a toll station (BS), automatic telephones (TA) and similar vendors of services or benefits attached to the system.

For settlement between income accounts (AIK, BIK) and use accounts (R1K, R2K, R3K ..., RnK), the accounting system (KS) operates in a similar manner as for transfer between accounts in banks, however in this case on the basis of recorded use from the automatic vending machines in the registers (R1, R2, R3 ..., Rn) via the transfer lines (FL). Technically, the transactions may take place on the basis of manual or computer-based solutions, or combinations thereof.

Thereby the method and the system in accordance with the invention give the opportunity to have several card companies attached, while at the same time all groups of service providers attached to the accounting system can be served, and the card user may use one single card irrespective of service or region.

The identification (Id) of card company on the card may also contain a country code (N), so that balance and withdrawal can be recalculated in accordance with rates of exchange, whereby the card is also internationally applicable.

Hence, the method and the system in accordance with the invention does not only eliminate the above mentioned regional and selective barriers for use of stored value cards, but also international barriers.

## P A T E N T C L A I M S

1. A method for achieving settlement mediation between a payment recipient (A, B) issuing or increasing credit value (S) in stored value cards or electronic payment chips, and other vendors of the services from the use vending machines (P, BS, TA) that the card is used to pay for,  
characterized in that the payment recipient (A, B), when selling a card or increasing the credit of a card, transfers the sales income to the income accounts (AIK, BIK) of an accounting system (KS), the use vending machines during reducing of the card credit (S) transferring the reduction value to a register (R1, R2, R3 ..., Rn) that via connection lines (FL) is transferred to the accounting system (KS) where these records constitute a settlement basis from the income accounts (AIK, BIK) for the payment recipient (A, B) for sale of a card or increasing the card credit, and to accounts (R1K, R2K, R3K ..., RnK) for different vendors of services from the use vending machines (P, BS, TA), and  
that the use vending machines also record from the used card or electronic payment chip an identification (Id) of the payment recipient (A, B), where the accounting system uses this identification to draw settlement to a vendor of use vending machine services from the income account of the correct payment recipient.
2. The method of claim 1,  
characterized in that the use vending machines record from the used card or electronic payment chip a country code (N) for the national affiliation of the card or chip, for recalculating currency when charging the card and calculating a new card balance in international use.
3. A system utilizing methods as stated in claim 1 or 2,  
characterized in that the use vending machines store records of payments and attached identifications (Id, N) internally in a register (R1, R2, R3 ..., Rn), thereafter to transfer periodically these records to the accounting system for settlement.

4. A system utilizing methods as stated in claim 1 or 2,  
characterized in that the use vending machines store records of  
payments and attached identifications (Id, N) internally in a register (R1, R2, R3  
..., Rn), thereafter to transfer, when certain amounts have been obtained in the  
registers, the records to the accounting system for settlement.
  
5. A system utilizing methods as stated in claim 1 or 2,  
characterized in that the use vending machines continuously transfer  
the records of a register (R1, R2, R3 ..., Rn) of payments, to the accounting  
system for settlement.  
10

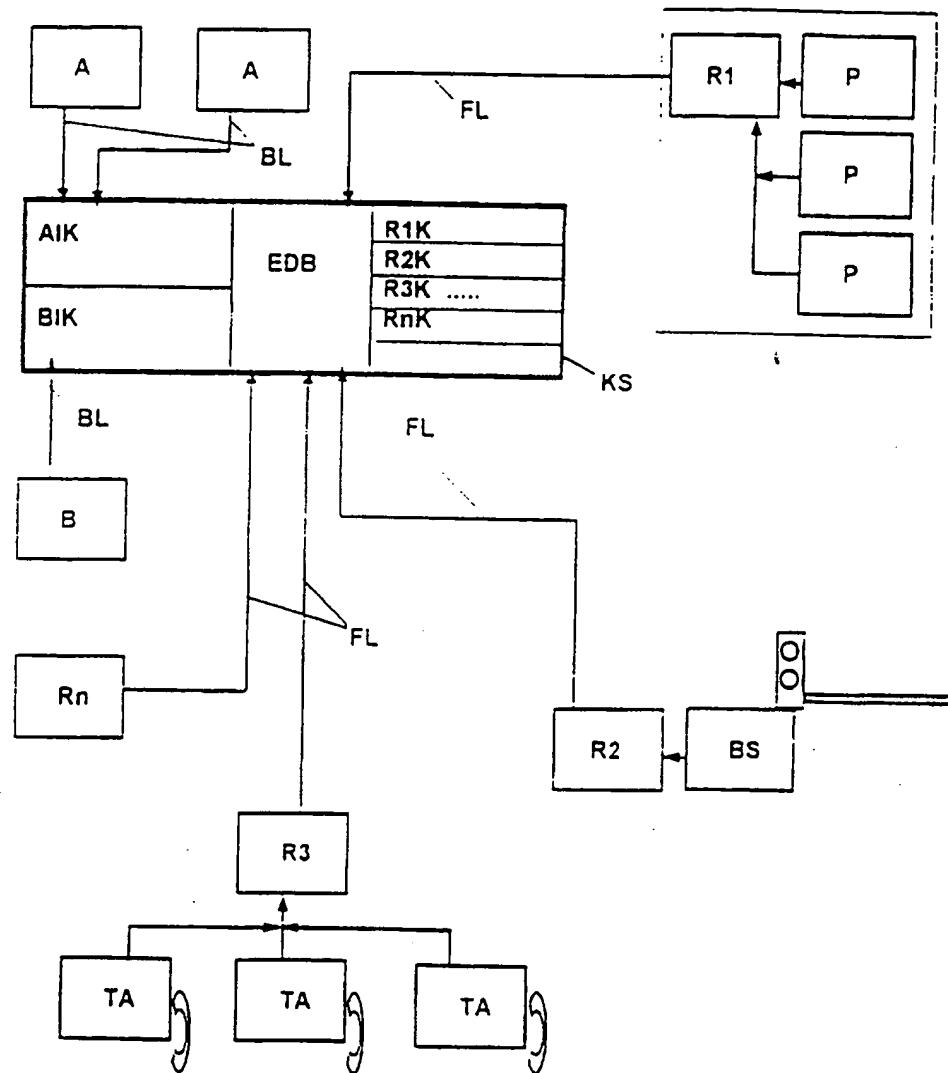


Fig. 1

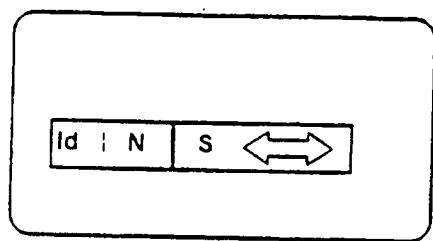


Fig. 2

## INTERNATIONAL SEARCH REPORT

1

International application No.

PCT/NO 97/00208

## A. CLASSIFICATION OF SUBJECT MATTER

**IPC6:** G06F 17/60, G07F 7/08, G07G 1/14 // G06F 157:00  
 According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: G06F, G07F, G07G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EDOC, INSPEC, CLAIMS, WPI

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Utlandsrapport från Sveriges tekniska attachéer, Nya Franska ..., Volume, 1993, (Stockholm), L. Sandh, "7.3 Det nationella"electroniska portmonnä"-projektet", see chapter 7.3.3	1,3
Y		2
A	--	4-5
X	US 4877947 A (TORU MORI), 31 October 1989 (31.10.89), column 2, line 16 - line 50	1,3
Y		2
A	--	4-5

 Further documents are listed in the continuation of Box C. See patent family annex.

• Special categories of cited documents:	
"A"	document defining the general state of the art which is not considered to be of particular relevance
"B"	earlier document but published on or after the international filing date
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O"	document referring to an oral disclosure, use, exhibition or other means
"P"	document published prior to the international filing date but later than the priority date claimed
"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X"	document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y"	document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&"	document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
26 January 1998	27-01-1998
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86	Authorized officer  Jan Silfverling Telephone No. +46 8 782 25 00

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/NO 97/00208

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,P	WO 9636024 A1 (KONINKLIJKE PTT), 14 November 1996 (14.11.96), page 3, line 6 - page 5, line 9 -----	2

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

07/01/98

International application No.

PCT/NO 97/00208

Patent document cited in search report	Publication date		Patent family member(s)	Publication date
US 4877947 A	31/10/89		DE 3789179 D,T EP 0256768 A,B HK 38495 A JP 2096562 C JP 7104891 B JP 63039099 A	07/07/94 24/02/88 24/03/95 02/10/96 13/11/95 19/02/88
WO 9636024 A1	14/11/96		AU 5816196 A NL 1000352 C NO 975157 D	29/11/96 00/00/00 00/00/00

Form PCT/ISA/210 (patent family annex) (July 1992)